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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,833	06/07/2001	Olaf Duebel	11150/29	2893

26646 7590 05/02/2003

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ONE BROADWAY  
NEW YORK, NY 10004

EXAMINER
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SCALTRITO, DONALD V

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 05/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/700,833

Applicant(s)

DUEBEL ET AL.

Examiner

Donald V Scaltrito

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17, 19, 22-25, 30-32, 34-37, 39 and 40 is/are rejected.
- 7) ☒ Claim(s) 18, 20, 21, 26-29, 33 & 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17, 19, 22, 23, 25, 30-32, 34-37, 39 & 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buswell et al. (U.S. Patent No. 5,360,679) in view of Gosselin, Jr. et al. (U.S. Patent No. 5,875,722).

Buswell et al. teach a hydrocarbon fueled solid polymer fuel cell electric power generation system wherein the power generation system comprises a reformer unit that produces hydrogen from a raw material, a fuel cell unit that is disposed downstream of the reformer unit and an oxidation device that oxidizes carbon monoxide into carbon dioxide (see column 2, lines 54-67 of this reference; see also Figures 1 & 2). Buswell et al. fails to teach or fairly suggest, however, the disposition of a water injection device at the oxidation device.

Gosselin, Jr. et al. teach a system and method for gas purification wherein the use of a water injection device disposed at an oxidation device is disclosed. Gosselin, Jr. et al. go on to teach that adding external water through water injection helps to humidify the reactant stream and facilitate desired chemical reactions to take place (see column 4, lines 43-60 of this reference). The Examiner would like to point out that although the oxidation reactions disclosed by Buswell et al (directed to conversion of carbon monoxide to carbon dioxide) and Gosselin, Jr.

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et al. (directed to conversion of sulfur dioxide and nitrogen dioxide to sulfuric acid and nitric acid, respectively) are different and distinct chemical reactions, the overall function of adding external water to these reactions is to govern and control the thermodynamics of the process. Therefore, since both reactions disclosed by Buswell et al. and Gosselin, Jr. et al. are oxidation reactions, the Examiner interprets these reactions as fundamentally equivalent.

With respect to Claim 17, it would have been obvious to one of ordinary skill in the art at the time the invention as a whole was made to modify the invention of Buswell et al. by incorporating the addition of external water through the use of a water injection device, as taught by Gosselin, Jr. et al., because Gosselin, Jr. et al. teach that adding external water through water injection helps to humidify the reactant stream and facilitate desired chemical reactions to take place. With respect to Claim 19, Buswell et al. teach the use of a liquid raw material (column 2, lines 39-45). With respect to Claim 22, Buswell et al. teach a two-stage compressor for compressing air (column 2, lines 25-38). With respect to Claim 23, Buswell et al. teach the separation of water from the fuel cell exhaust gases (column 10, lines 10-16). With respect to Claim 24, although a condenser is not specifically disclosed by Buswell et al., it would have been obvious to one of ordinary skill in the art to employ a condenser at the water separation means. With respect to Claim 25, Buswell et al. teach a water coolant loop (column 14, lines 7-12). With respect to Claim 30 & 31, Buswell et al. teach that the raw material contains hydrogen in the form of methanol (column 2, lines 49-54).

With respect to Claim 32, the combination of Buswell et al. and Gosselin, Jr. et al. teach the limitations of this method claim. With respect to Claim 34, Gosselin, Jr. et al. teach that water may be injected in vapor form and/or a high-pressure atomized form (column 4, lines 43-

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60). With respect to Claim 35, Buswell et al. teach a two-stage compressor for compressing air (column 2, lines 25-38). With respect to Claims 36 & 37, Buswell et al. teach that water is separated from the fuel cell exhaust stream and then used to help in the reforming process (column 4, lines 3-14). With respect to Claim 39 & 40, Buswell et al. teach that the raw material contains hydrogen in the form of methanol (column 2, lines 49-54).

### *Allowable Subject Matter*

*minor, cl. 20?*  
Claims 18, 20, 21, 26-29, 33 & 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or fairly suggest a fuel cell system as claimed by the current application wherein the system comprises a drive system of a motor vehicle. The prior art of record fails to teach or fairly suggest a condenser that is employed as a water separation device<sup>?</sup>. The prior art of record fails to teach or fairly suggest a catalytic burner that is used in conjunction with the fuel cell system as claimed by the current application. The prior art of record fails to teach or fairly suggest the use of an expander in conjunction with the fuel cell system as claimed by the current application.

### *Conclusion*

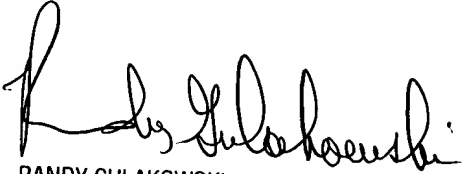
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald Scaltrito, whose telephone number is 703.305.4926. The examiner can be reached in his office on Monday-Friday between the hours of 9am to 6pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, may be reached at 703.308.4333. The official fax number for the organization where this application or proceeding is assigned is 703.305.3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661

Donald Scaltrito  
Patent Examiner  
Art Unit 1746  
April 28, 2003



RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
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